

### **DETAILED ACTION**

1. This Office Action is in response to correspondence filed September 15, 2008 in reference to application 10/782,171. Claims 1, 5-7, and 11-13 are pending in the application and have been examined.

#### ***Response to Amendment***

2. The amendments filed September 15, 2008 has been accepted and considered in this office action. Claims 1, 7, and 13 have been amended, and claims 14-16 have been cancelled.

#### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1, 7, and 13 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 5-7, 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flam et al (2004/0039996), in view of Davis (The Bidirectional Algorithm), and further in view of Lissauer et al. (US PAP 2003/0135358).

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6. Consider claim 1, Flam teaches a method of displaying a mixed language text message in a dialog box (In some preferred embodiments of the present invention, the applet running on the viewing computer generates a bi-directional window on the computer screen, in which all the characters, both Latin and in the selected non-Latin alphabet, are displayed using the appropriate alphabets and in the proper (LTR or RTL) order; paragraph 0015.), the method comprising the steps of:

determining a reading order for a sentence of a mixed language text message to be displayed in a dialog box of a computer system user interface of a computer system operating system, the reading order being appropriate to render the sentence readable upon display thereof (To overcome this problem, mouse 25 is used to select a "switch" button 62 in window 56, which reverses the order of the Hebrew letters, as shown in FIG. 3C. Latin characters in the window are not reversed. Passage 54 is now returned to its original, intelligible form; paragraph 0062. Clearly, it is inherent that a determination of a reading order must be made, if only the Hebrew characters are being reversed.);

displaying the mixed language text message in the dialog box of the computer system user interface using the determined reading order and (To overcome this problem, mouse 25 is used to select a "switch" button 62 in window 56, which reverses the order of the Hebrew letters, as shown in FIG. 3C. Latin characters in the window are not reversed. Passage 54 is now returned to its original, intelligible form; paragraph 0062.).

This embodiment of Flam does not specifically teach determining an alignment for the mixed language text message, the alignment being appropriate to render the mixed language text message readable upon display thereof.

However, in the same field of mixed language messages Flam does teach, in the other embodiment of the invention dealing more with writing mixed language texts instead of strictly displaying, determining an alignment for the mixed language text message, the alignment being appropriate to render the mixed language text message readable upon display thereof (Assuming that Hebrew operation has been invoked (by selecting button 30), each new keystroke or key selection received by the applet causes the corresponding character to be displayed at the left of the last line appearing in window 44; paragraph 0057. Clearly if the next character is appearing to the left of the first, the text is right aligned.).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include the alignment of text as taught by the writing embodiment of Flam with the displaying method as taught by the displaying embodiment of Flam in order to allow for the portions of each text that correspond to each language to appear in its proper format; Flam paragraph 0057.

These two embodiments of Flam do not specifically teach wherein determining a reading order comprises,

evaluating successively, by the computer system, a plurality of characters comprising the mixed language text message to determine whether ones of the plurality of characters comprise one of the following: a strong character and a weak character,

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determining by the computer system, the language of a first strong character in the plurality of characters encountered during the successive evaluation, and

establishing the reading order based upon a language corresponding to the first strong character, wherein the strong character comprises at least one alphabetic character and the weak character comprises at least one non-alphabetic character,

In the same field of Bilingual texts, Davis teaches evaluating successively, by the computer system, a plurality of characters comprising the mixed language text message to determine whether ones of the plurality of characters comprise one of the following: a strong character and a weak character wherein the strong character comprises at least one alphabetic character and the weak character comprises at least one non-alphabetic character (On Page 7 of Davis, BD1 says that bidirectional character types are assigned to each Unicode character. Character types are shown in table 3-7 to include strong and weak character types, which include alphabetic and non-alphabetic characters such as numbers respectively. Sections X1-X9 on pages 11-13 show examining each character iteratively (X1) to processes strong types, including alphabetic characters (X6). Weak Character types are dealt with on pages 13-15),

determining by the computer system, the language of a first strong character in the plurality of characters encountered during the successive evaluation (Figure 3-7 shows which languages fall into each category of L, AL or R type characters.), and

establishing the reading order based upon a language corresponding to the first strong character (paragraph embedding level is set on the basis of whether L, AL and R

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is found; page 14, step P3. These embedding levels are used in determining reading order; pages 14-24.),

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the strong and weak character evaluation of Davis with the system of Flam in order to provide a way of making the determinations of directional information using well know Unicode standard techniques eliminating the need for manual determination.

Flam and Davis does not specifically teach wherein determining the language to the first strong character comprises identifying a code page comprising a character set associated with the language, and

wherein establishing the reading order based upon the language comprises identifying the reading order established in the code page associated with the language.

In the same field of Multi-language display, Lissauer teaches identifying a code page comprising a character set associated with the language (paragraph 0045 Unicode is encoded to a Windows code page); and

identifying the reading order established in the code page associated with the language (a Windows code page by definition contains directional information, and therefore it would have been obvious to use this.).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use code pages as suggested by Lissauer with the display system of Flam and Davis in order to use standardized formatting databases and techniques to display the text properly.

7. Consider claim 5, Flam teaches the method of claim 1, wherein determining an alignment comprises determining the alignment of the language otherwise employed by the computer system user interface to display text (Assuming that Hebrew operation has been invoked (by selecting button 30), each new keystroke or key selection received by the applet causes the corresponding character to be displayed at the left of the last line appearing in window 44; paragraph 0057. Clearly if the next character is appearing to the left of the first, the text is right aligned. Although this is in the “writing” part of Flam’s invention, clearly one of ordinary skill in the art could appreciate that this alignment is applicable to the display as well. Further, the invention of flam displays characters of a non-default language; paragraph 0025. This would imply that all characteristics if Hebrew is not selected would be determined by the defaults of the system.).

8. Consider claim 6, Flam teaches the method of claim 1, wherein displaying comprises overriding the reading order setting otherwise employed by the computer system user interface to display text (Preferably, displaying the characters includes translating the codes of the characters on the display so that they appear in the window in an alphabet of the non-default language. Further preferably, translating the codes of the characters includes reversing an order of the converted characters so that they appear in their correct order in the non-default language, wherein reversing the order of the characters includes reversing an order of at least some of the characters in the

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window responsive to an order switch invoked by a user of the computer; paragraph 0025.).

9. Consider claim 7, Flam teaches a computer readable storage medium having computer-executable instructions (codes are processed by means of an applet, paragraph 0044), therefore a computer readable medium is inherent) for displaying a mixed language text message in a dialog box (In some preferred embodiments of the present invention, the applet running on the viewing computer generates a bi-directional window on the computer screen, in which all the characters, both Latin and in the selected non-Latin alphabet, are displayed using the appropriate alphabets and in the proper (LTR or RTL) order; paragraph 0015.), the method comprising the steps of:

determining a reading order for a sentence of a mixed language text message to be displayed in a dialog box of a computer system user interface of a computer system operating system, the reading order being appropriate to render the sentence readable upon display thereof (To overcome this problem, mouse 25 is used to select a "switch" button 62 in window 56, which reverses the order of the Hebrew letters, as shown in FIG. 3C. Latin characters in the window are not reversed. Passage 54 is now returned to its original, intelligible form; paragraph 0062. Clearly, it is inherent that a determination of a reading order must be made, if only the Hebrew characters are being reversed.);

displaying the mixed language text message in the dialog box of the computer system user interface using the determined reading order and (To overcome this

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problem, mouse 25 is used to select a "switch" button 62 in window 56, which reverses the order of the Hebrew letters, as shown in FIG. 3C. Latin characters in the window are not reversed. Passage 54 is now returned to its original, intelligible form; paragraph 0062.).

This embodiment of Flam does not specifically teach determining an alignment for the mixed language text message, the alignment being appropriate to render the mixed language text message readable upon display thereof.

However, in the same field of mixed language messages Flam does teach, in the other embodiment of the invention dealing more with writing mixed language texts instead of strictly displaying, determining an alignment for the mixed language text message, the alignment being appropriate to render the mixed language text message readable upon display thereof (Assuming that Hebrew operation has been invoked (by selecting button 30), each new keystroke or key selection received by the applet causes the corresponding character to be displayed at the left of the last line appearing in window 44; paragraph 0057. Clearly if the next character is appearing to the left of the first, the text is right aligned.).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include the alignment of text as taught by the writing embodiment of Flam with the displaying method as taught by the displaying embodiment of Flam in order to allow for the portions of each text that correspond to each language to appear in its proper format; Flam paragraph 0057.



These two embodiments of Flam do not specifically teach wherein determining a reading order comprises,

evaluating successively, by the computer system, a plurality of characters comprising the mixed language text message to determine whether ones of the plurality of characters comprise one of the following: a strong character and a weak character,

determining by the computer system, the language of a first strong character in the plurality of characters encountered during the successive evaluation, and

establishing the reading order based upon a language corresponding to the first strong character.

In the same field of Bilingual texts, Davis teaches evaluating successively, by the computer system, a plurality of characters comprising the mixed language text message to determine whether ones of the plurality of characters comprise one of the following: a strong character and a weak character wherein the strong character comprises at least one alphabetic character and the weak character comprises at least one non-alphabetic character (On Page 7 of Davis, BD1 says that bidirectional character types are assigned to each Unicode character. Character types are shown in table 3-7 to include strong and weak character types, which include alphabetic and non-alphabetic characters such as numbers respectively. Sections X1-X9 on pages 11-13 show examining each character iteratively (X1) to processes strong types, including alphabetic characters (X6). Weak Character types are dealt with on pages 13-15),

determining by the computer system, the language of a first strong character in the plurality of characters encountered during the successive evaluation (Figure 3-7 shows which languages fall into each category of L, AL or R type characters.), and

establishing the reading order based upon a language corresponding to the first strong character (paragraph embedding level is set on the basis of whether L, AL and R is found; page 14, step P3. These embedding levels are used in determining reading order; pages 14-24.),

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the strong and weak character evaluation of Davis with the system of Flam in order to provide a way of making the determinations of directional information using well know Unicode standard techniques eliminating the need for manual determination.

Flam and Davis does not specifically teach wherein determining the language to the first strong character comprises identifying a code page comprising a character set associated with the language, and

wherein establishing the reading order based upon the language comprises identifying the reading order established in the code page associated with the language.

In the same field of Multi-language display, Lissauer teaches identifying a code page comprising a character set associated with the language (paragraph 0045 Unicode is encoded to a Windows code page); and

identifying the reading order established in the code page associated with the language (a Windows code page by definition contains directional information, and therefore it would have been obvious to use this.).

Therefore it would have been obvious to use code pages as suggested by Lissauer within the display system of Flam and Davis in order to use standardized formatting databases and techniques to display the text properly.

10. Consider claim 11, Flam teaches the computer readable medium of claim 7, wherein determining an alignment comprises determining the alignment of the language otherwise employed by the computer system user interface to display text (Assuming that Hebrew operation has been invoked (by selecting button 30), each new keystroke or key selection received by the applet causes the corresponding character to be displayed at the left of the last line appearing in window 44; paragraph 0057. Clearly if the next character is appearing to the left of the first, the text is right aligned. Although this is in the “writing” part of Flam’s invention, clearly one of ordinary skill in the art could appreciate that this alignment is applicable to the display as well. Further, the invention of flam displays characters of a non-default language; paragraph 0025. This would imply that all characteristics if Hebrew is not selected would be determined by the defaults of the system.).

11. Consider claim 12, Flam teaches the computer readable medium of claim 7, wherein the step of displaying comprises a step of overriding the reading order setting

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otherwise employed by the computer system user interface to display text (Preferably, displaying the characters includes translating the codes of the characters on the display so that they appear in the window in an alphabet of the non-default language. Further preferably, translating the codes of the characters includes reversing an order of the converted characters so that they appear in their correct order in the non-default language, wherein reversing the order of the characters includes reversing an order of at least some of the characters in the window responsive to an order switch invoked by a user of the computer; paragraph 0025.).

12. Consider claim 13, Flam teaches a method of establishing a reading order for a sentence of a mixed language text message to be displayed in a dialog box of a computer system user interface (In some preferred embodiments of the present invention, the applet running on the viewing computer generates a bi-directional window on the computer screen, in which all the characters, both Latin and in the selected non-Latin alphabet, are displayed using the appropriate alphabets and in the proper (LTR or RTL) order; paragraph 0015.), the method comprising:

setting the reading order of the sentence of the mixed language text message to be the reading order of the located alphabetic character (To overcome this problem, mouse 25 is used to select a "switch" button 62 in window 56, which reverses the order of the Hebrew letters, as shown in FIG. 3C. Latin characters in the window are not reversed. Passage 54 is now returned to its original, intelligible form; paragraph 0062.).

determining whether a reading order has previously been established for a paragraph in which the sentence is present (paragraph 0025 teaches reversing reading orders for characters not of a language not of the default language. Therefore a reading order would have been established for the default language, whether it be for the system or for the document.); and,

in response to determining that a reading order has previously been established for the paragraph, setting the reading order of the sentence of the mixed language text message to be the reading order of the paragraph (paragraph 0025 teaches reversing reading orders for characters not of a language not of the default language. Therefore a reading order would have been established for the default language, whether it be for the system or for the document, and would inherently be used in the case no determination of language could be made.);

determining whether the sentence comprises a first sentence of the mixed language text message; and, in response to determining that the sentence does not comprise a first sentence of the mixed language text message, setting the reading order of the sentence of the mixed language text message to be the reading order of the first sentence of the mixed language text message (Paragraph 0025 teaches reversing reading orders for characters not of a language not of the default language. Therefore a reading order would have been established for the default language, whether it be for the system or for the document, and would inherently be used in the case no determination of language could be made.)

in response to determining that the sentence comprises a first sentence of the mixed language text message, setting the reading order of the sentence of the mixed language text message to be the reading order used by an operating system program to display text in the computer system user interface (Flam teaches using default language settings, paragraph 0025).

But Flam does not specifically teach examining characters of a sentence of a mixed language text message in succession in an attempt to locate at least one strong character, wherein the at least one strong character comprises an alphabetic character, determining the reading order of the located alphabetic character by ascertaining by the computer system: a language to which the located alphabetic character belongs and a script to which the located alphabetic character belongs,

Establishing the reading order of the sentence based upon a language corresponding to the located alphabetic character.

In the same field of bidirectional text, Davis teaches examining characters of a sentence of a mixed language text message in succession in an attempt to locate at least one strong character, wherein the at least one strong character comprises an alphabetic character (On Page 7 of Davis, BD1 says that bidirectional character types are assigned to each Unicode character. Character types are shown in table 3-7 to include strong and weak character types, which include alphabetic and non-alphabetic characters such as numbers respectively. Sections X1-X9 on pages 11-13 show examining each character iteratively (X1) to processes strong types, including alphabetic characters (X6). Weak Character types are dealt with on pages 13-15),

determining the reading order of the located alphabetic character by ascertaining by the computer system at least one of the following: a language to which the located alphabetic character belongs and a script to which the located alphabetic character belongs (The is scanned to find the first L AL or R type character; page 14; paragraph 2. These are strong character types as defined by table 3-7. In order for this determination to be made, it is inherent that each character must be determined to be one of these categories which fall into either strong or weak. Figure 3-7 shows which languages and scripts fall into each category of L, AL or R type characters. In effect by making a determination on what kind of character a character is, Davis determines script or language.).

establishing the reading order based upon a language corresponding to the first strong character (paragraph embedding level is set on the basis of whether L, AL and R is found; page 14, step P3. These embedding levels are used in determining reading order; pages 14-24.)

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the strong and weak character evaluation of Davis with the system of Flam in order to provide a way of making the determinations of directional information using well know Unicode standard techniques eliminating the need for manual determination.

Flam and Davis does not specifically teach wherein determining the language to the first strong character comprises identifying a code page comprising a character set associated with the language, and

wherein establishing the reading order based upon the language comprises identifying the reading order established in the code page associated with the language.

In the same field of Multi-language display, Lissauer teaches identifying a code page comprising a character set associated with the language (paragraph 0045 Unicode is encoded to a Windows code page); and

identifying the reading order established in the code page associated with the language (a Windows code page by definition contains directional information, and therefore it would have been obvious to use this.).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use code pages as suggested by Lissauer within the display system of Flam and Davis in order to use standardized formatting databases and techniques to display the text properly.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the



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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOUGLAS C. GODBOLD whose telephone number is (571)270-1451. The examiner can normally be reached on Monday-Thursday 7:00am-4:30pm Friday 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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